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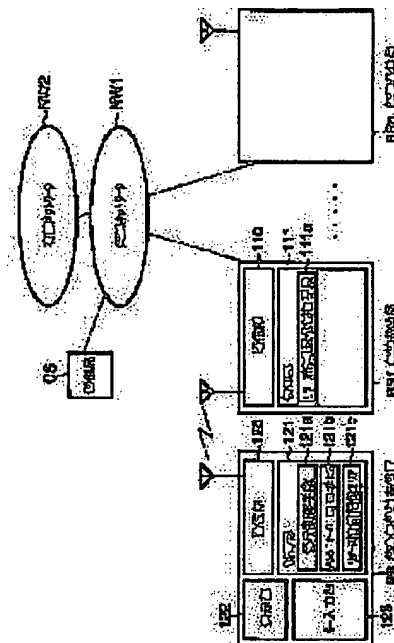
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## (54) MOBILE RADIO COMMUNICATION SYSTEM AND MOBILE RADIO TERMINAL

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain a mobile radio communication system by which communication can be continued through packet exchange connection even when communication by line exchange connection cannot be continued in a radio base station at a moving destination in the case of hand-over.

**SOLUTION:** A resource transmission control means 111a in each of radio base stations BS1-BSn detects an operating state of a resource to respectively conduct line exchange connection and packet exchange connection in its own station and informs a mobile radio terminal PS of it. Resource information received from the radio base stations BS1-BSn is stored in a resource information storage area 121c of the mobile radio terminal PS. Moreover, a call control means 121a makes a call on the basis of the resource information. A hand-over control means 121b conducts hand-over control and sets up a communication link of exchange connection of a type based on the resource information received from a radio base station of a moving destination.



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**CLAIMS**

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[Claim(s)]

[Claim 1] The packet-switching mold communication link which communicates by occupying a circuit only in case a mobile radio terminal unit is connected through a base transceiver station and a wireless circuit connectable with a communication network and the packet-sized data are transmitted, In the mobile radio communication system which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly An information transmitting means to transmit the information said packet-switching mold communication link and said line switching mold communication link indicate it to be whether it is possible in said base transceiver station, respectively to said mobile radio terminal unit, A receiving means to receive said information, and in case said mobile radio terminal unit performs a line switching mold communication link through said base transceiver station Mobile radio communication system characterized by providing the means of communications which performs a packet-switching mold communication link instead of a line switching mold communication link when it is what shows that a line switching mold communication link is impossible for the information received with said receiving means.

[Claim 2] Said means of communications is mobile radio communication system according to claim 1 characterized by performing a line switching mold communication link instead of a packet-switching mold communication link when it is what shows that a line switching mold communication link is possible for the information received with said receiving means after performing a packet-switching mold communication link instead of a line switching mold communication link.

[Claim 3] Said means of communications is mobile radio communication system according to claim 1 characterized by performing a packet-switching mold communication link instead of a line switching mold communication link according to the volition of the user of said mobile radio terminal unit when it is what shows that a line switching mold communication link is impossible for the information received with said receiving means, in case a line switching mold communication link is performed through said base transceiver station.

[Claim 4] The packet-switching mold communication link which communicates by occupying a circuit only in case a mobile radio terminal unit is connected through a base transceiver station and a wireless circuit connectable with a communication network and the packet-sized data are transmitted, In the mobile radio communication system which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly An information transmitting means to transmit the information said packet-switching mold communication link and said line switching mold communication link indicate it to be whether it is possible in said base transceiver station, respectively to said mobile radio terminal unit, Said mobile radio terminal unit, performing a line switching mold communication link through a receiving means to receive said information, and said base transceiver station In case a handover is performed to the base transceiver station of a migration place, the information received with said receiving means When it is what shows that a line switching mold communication link is impossible in the base transceiver station of said migration place Mobile radio communication system characterized by providing the means of communications which performs a handover by performing a packet-switching mold communication link instead of the base transceiver station of said migration place, and a line switching mold

communication link.

[Claim 5] Said means of communications is mobile radio communication system according to claim 4 characterized by performing a line switching mold communication link instead of a packet-switching mold communication link when it is what shows that a line switching mold communication link is possible for the information received with said receiving means after performing a handover by packet-switching mold communication link instead of a line switching mold communication link.

[Claim 6] Said means of communications, performing a line switching mold communication link through said base transceiver station In case a handover is performed to the base transceiver station of a migration place, the information received with said receiving means When it is what shows that a line switching mold communication link is impossible in the base transceiver station of said migration place Mobile radio communication system according to claim 4 characterized by performing a handover according to the volition of the user of said mobile radio terminal unit by performing a packet-switching mold communication link instead of the base transceiver station of said migration place, and a line switching mold communication link.

[Claim 7] The packet-switching mold communication link which connects through a base transceiver station and a wireless circuit connectable with a communication network, and communicates by occupying a circuit only in case the packet-sized data are transmitted, In the mobile radio terminal unit which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly A receiving means by which said packet-switching mold communication link and said line switching mold communication link receive the information which shows whether it is possible in said base transceiver station from said base transceiver station, respectively, The mobile radio terminal unit characterized by providing the means of communications which performs a packet-switching mold communication link instead of a line switching mold communication link when it is what shows that a line switching mold communication link is impossible for the information received with said receiving means, in case a line switching mold communication link is performed through said base transceiver station.

[Claim 8] Said means of communications is a mobile radio terminal unit according to claim 7 characterized by performing a line switching mold communication link instead of a packet-switching mold communication link when it is what shows that a line switching mold communication link is possible for the information received with said receiving means after performing a packet-switching mold communication link instead of a line switching mold communication link.

[Claim 9] Said means of communications is a mobile radio terminal unit according to claim 7 characterized by performing a packet-switching mold communication link instead of a line switching mold communication link according to the volition of the user of said mobile radio terminal unit when it is what shows that a line switching mold communication link is impossible for the information received with said receiving means, in case a line switching mold communication link is performed through said base transceiver station.

[Claim 10] The packet-switching mold communication link which connects through a base transceiver station and a wireless circuit connectable with a communication network, and communicates by occupying a circuit only in case the packet-sized data are transmitted, In the mobile radio terminal unit which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly A receiving means by which said packet-switching mold communication link and said line switching mold communication link receive the information which shows whether it is possible in said base transceiver station from said base transceiver station, respectively, In case a handover is performed to the base transceiver station of a migration place, performing a line switching mold communication link through said base transceiver station When the information received with said receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of said migration place The mobile radio terminal unit characterized by providing the means of communications which performs a handover by performing a packet-switching mold communication link instead of the base transceiver station of said migration place, and a line switching mold communication link.

[Claim 11] Said means of communications is a mobile radio terminal unit according to claim 10 characterized by performing a line switching mold communication link instead of a packet-switching mold communication link when it is what shows that a line switching mold communication link is

possible for the information received with said receiving means after performing a handover by packet-switching mold communication link instead of a line switching mold communication link. [Claim 12] Said means of communications, performing a line switching mold communication link through said base transceiver station In case a handover is performed to the base transceiver station of a migration place, the information received with said receiving means When it is what shows that a line switching mold communication link is impossible in the base transceiver station of said migration place The mobile radio terminal unit according to claim 10 characterized by performing a handover according to the volition of the user of said mobile radio terminal unit by performing a packet-switching mold communication link instead of the base transceiver station of said migration place, and a line switching mold communication link.

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Field of the Invention]** This invention relates to the mobile radio terminal unit used by one of topologies by the mobile radio communication system which connects a mobile radio terminal unit to a communication network, and this system among the packet-switching mold connections with circuit switched connection.

**[0002]**

**[Description of the Prior Art]** As everyone knows, the conventional mobile radio communication system has some which have circuit switched connection and packet-switching mold connection as a gestalt which connects a mobile radio terminal unit (a mobile station is called hereafter) to a communication network.

**[0003]** Circuit switched connection is a topology which occupies a circuit from call origination before [ terminal ] cutting of a call, and is suitable for mainly communicating continuous information, such as voice and an image, on real time.

**[0004]** Moreover, only in case packet-switching mold connection transmits the packet-ized data, it is a topology which occupies a circuit, and the packet transmitted is temporarily accumulated in a packet switch, and is transmitted to the terminal of a communications partner via a packet switch one by one according to routing. This topology is mainly applied to the communication link with the low demand of real time nature like data communication.

**[0005]** In addition, in the conventional mobile radio communication system, the topology to which these switching gestalten were determined at the time of a call setup, and were set once is not changed until a call is cut.

**[0006]** By the way, in the conventional mobile radio communication system, when the mobile station which is carrying out circuit switched connection moved between cels and a handover was performed, the communication link by circuit switched connection could not be continued through the base station of a migration place, but there was a case where a call was cut.

**[0007]** This originates in all the walkie-talkies for circuit switched connections using it in the base transceiver station in which circuit switched connection forms a wireless zone at a migration place since communication link time amount is long compared with packet-switching mold connection.

**[0008]** Moreover, when call origination for a mobile station to perform circuit switched connection was performed and there was no opening in the walkie-talkie for circuit switched connections as mentioned above, a call request was not received but there was a case where it could not communicate.

**[0009]**

**[Problem(s) to be Solved by the Invention]** In the conventional mobile radio communication system, when all the walkie-talkies for circuit switched connections were using it in the base transceiver station which forms the wireless zone of a migration place, for example at the time of a handover, the communication link by circuit switched connection could not be continued through the base transceiver station of a migration place, but there was a problem that a call will be cut.

**[0010]** Even if this invention was made that the above-mentioned problem should be solved and cannot continue the communication link by circuit switched connection in the base transceiver station of a migration place at the time of a handover, it aims at offering the mobile radio

communication system which can continue a communication link by packet-switching mold connection.

[0011] Moreover, in the conventional mobile radio terminal unit, when there was no opening in the walkie-talkie for the circuit switched connections of a base transceiver station when call origination which performs circuit switched connection was performed for example, a call request was not received but there was a problem that it may be unable to communicate.

[0012] This invention was made that the above-mentioned problem should be solved, and even when not receiving the call request to which a base transceiver station performs circuit switched connection, it aims at offering the mobile radio terminal unit which can start a communication link by packet-switching mold connection.

[0013]

[Means for Solving the Problem] In order to attain the above-mentioned object, this invention is connected through the base transceiver station and wireless circuit which a mobile radio terminal unit can connect to a communication network. In the mobile radio communication system which performs selectively the packet-switching mold communication link which communicates by occupying a circuit only in case the packet-sized data are transmitted, and the line switching mold communication link which communicates by occupying a circuit regularly An information transmitting means to transmit the information a packet-switching mold communication link and a line switching mold communication link indicate it to be whether it is possible in a base transceiver station, respectively to a mobile radio terminal unit, and a mobile radio terminal unit A receiving means to receive information, and in case a line switching mold communication link is performed through a base transceiver station When it was what shows that a line switching mold communication link is impossible for the information received with the receiving means, the means of communications which performs a packet-switching mold communication link instead of a line switching mold communication link is provided, and it was made to constitute.

[0014] In order to attain the above-mentioned object, moreover, this invention The packet-switching mold communication link which connects through a base transceiver station and a wireless circuit connectable with a communication network, and communicates by occupying a circuit only in case the packet-sized data are transmitted, In the mobile radio terminal unit which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly A receiving means by which a packet-switching mold communication link and a line switching mold communication link receive the information which shows whether it is possible in a base transceiver station from a base transceiver station, respectively, In case a line switching mold communication link was performed through a base transceiver station, when it was what shows that a line switching mold communication link is impossible for the information received with the receiving means, the means of communications which performs a packet-switching mold communication link instead of a line switching mold communication link is provided, and it was made to constitute.

[0015] In the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration, in case a line switching mold communication link is performed through a base transceiver station, when it is what shows that a line switching mold communication link is impossible for the information received with the receiving means, instead of a line switching mold communication link, it is made to perform a packet-switching mold communication link.

[0016] Therefore, even when a base transceiver station does not receive the call request which performs circuit switched connection according to the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration, a communication link can be started by packet-switching mold connection.

[0017] In order to attain the above-mentioned object, moreover, this invention The packet-switching mold communication link which communicates by occupying a circuit only in case a mobile radio terminal unit is connected through a base transceiver station and a wireless circuit connectable with a communication network and the packet-sized data are transmitted, In the mobile radio communication system which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly An information transmitting means to transmit the information a packet-switching mold communication link and a line switching mold communication link indicate it to be whether it is possible in a base transceiver station, respectively to a mobile radio terminal unit,

and a mobile radio terminal unit Performing a line switching mold communication link through a receiving means to receive information, and a base transceiver station In case a handover is performed to the base transceiver station of a migration place, the information received with the receiving means When it was what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place, the means of communications which performs a handover is provided and it was made to constitute by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0018] In order to attain the above-mentioned object, again and this invention The packet-switching mold communication link which connects through a base transceiver station and a wireless circuit connectable with a communication network, and communicates by occupying a circuit only in case the packet-sized data are transmitted, In the mobile radio terminal unit which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly A receiving means by which a packet-switching mold communication link and a line switching mold communication link receive the information which shows whether it is possible in a base transceiver station from a base transceiver station, respectively, In case a handover is performed to the base transceiver station of a migration place, performing a line switching mold communication link through a base transceiver station When the information received with the receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place The means of communications which performs a handover is provided and it was made to constitute by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0019] In the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration In case a handover is performed to the base transceiver station of a migration place, performing a line switching mold communication link through a base transceiver station When the information received with the receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place, it is made to perform a handover by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0020] Therefore, even if the communication link by circuit switched connection is uncontinuable in the base transceiver station of a migration place at the time of a handover, a communication link is continuable according to the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration, with packet-switching mold connection.

[0021]

[Embodiment of the Invention] Hereafter, 1 operation gestalt of this invention is explained with reference to a drawing. Drawing 1 shows the configuration of the mobile radio communication system concerning the 1st operation gestalt of this invention.

[0022] Mobile radio communication system serves as the wireless network NW1, and a control station CS and base transceiver stations BS1-BSn from the mobile radio terminal unit (mobile station) PS as a main configuration.

[0023] A control station CS generalizes and controls base transceiver stations BS1-BSn through the wireless network NW1, and manages the positional information of the mobile radio terminal unit PS based on the location registration information notified from base transceiver stations BS1-BSn. And when the mobile radio terminal unit PS moves between the wireless zones which base transceiver stations BS1-BSn form, respectively, a control station CS gives directions to the base transceiver stations BS1-BSn of a migration place a moved material, respectively, and performs handover processing which changes the base transceiver station where the mobile radio terminal unit PS communicates.

[0024] By the wireless zone (cel) formed, respectively, base transceiver stations BS1-BSn form a wide area communications area, establish a radio link between the mobile radio terminal units PS, connect the mobile radio terminal unit PS to the cable network NW2 through the wireless network NW1, and are equipped with the communications department 110 and a control section 111 as a main configuration.

[0025] The communications department 110 makes selectively circuit switched connection which



communicates by occupying a communication link regularly through a wireless circuit among two or more mobile radio terminal units PS, and packet-switching mold connection which communicates by occupying a communication link only when transmitting and receiving the packet-sized data according to directions of a control section 111.

[0026] A control section 111 generalizes and controls each part of a local station according to the control program and control data with which it comes to have CPU, ROM, RAM, etc., and Above CPU is memorized by Above ROM, and is equipped with resource information transmission-control means 111a realized by software processing of Above CPU.

[0027] Resource information transmission-control means 111a detects the operating condition of the resource (the walkie-talkie and channel of the communications department) for making the circuit switched connection and packet-switching mold connection in a local station, respectively, and judges whether circuit switched connection and packet-switching mold connection are possible respectively through a local station. And the communications department 110 is controlled by making the result of this decision into resource information, and control transmitted to the mobile radio terminal unit PS is performed.

[0028] On the other hand, the mobile radio terminal unit PS is equipped with the communications department 120, a control section 121, a display 122, and the key input section 123 as a main configuration. The communications department 120 makes selectively circuit switched connection and packet-switching mold connection through a wireless circuit according to directions of a control section 111 between base transceiver stations BS.

[0029] A control section 121 generalizes and controls self each part according to the control program and control data with which it comes to have CPU, ROM, RAM, etc., and Above CPU is memorized by Above ROM, and it equips Above RAM with resource information storage area 121c while it is equipped with call origination control means 121a realized by software processing of Above CPU, and handover control means 121b.

[0030] When a demand of a user and a control section 121 perform an application program (application is called hereafter), call origination control means 121a performs call origination for switching the above-mentioned demand, application, and the mold according to the resource information received from the base transceiver stations BS1-BSn to connect, and establishes a communication link among base transceiver stations BS1-BSn.

[0031] Handover control means 121b performs handover control for communicating through the base transceiver stations BS1-BSn of a migration place, and establishes the communication link of switching of a mold based on the resource information received from this base transceiver station among the base transceiver stations BS1-BSn of a migration place.

[0032] Resource information storage area 121c is area which memorizes the resource information which the communications department 120 received from base transceiver stations BS1-BSn.

[0033] Next, actuation of the mobile radio communication system of the above-mentioned configuration is explained. Drawing 2 and drawing 4 are drawings showing the sequence of the communication link performed between the mobile radio terminal unit PS and base transceiver stations BS1 and BS2.

[0034] First, in a base transceiver station BS 1, when the mobile radio terminal unit PS performs call origination which requires the communication link of a line switching mold in the condition that the resources for communicating a line switching mold are insufficient, actuation is explained. The sequence is shown in drawing 2.

[0035] First, in a base transceiver station BS 1, first, the operating condition of a resource (the walkie-talkie and channel of the communications department) for resource information transmission-control means 111a to make the circuit switched connection and packet-switching mold connection in a local station with a predetermined period, respectively is detected, and it judges whether circuit switched connection and packet-switching mold connection are possible respectively through a local station. And by making the result of this decision into resource information, the communications department 110 is controlled and control to transmit is performed.

[0036] If the mobile radio terminal unit PS is in the wireless zone of a base transceiver station BS 1 at this time as shown in drawing 3, the mobile radio terminal unit PS will receive the resource information transmitted from a base transceiver station BS 1 by the communications department 120,

and will record this resource information on resource information storage area 121c. The condition so far is set to S1.

[0037] In addition, circuit switched connection is "impossible" and the resource information which the mobile radio terminal unit PS acquired from the base transceiver station BS 1 presupposes that packet-switching mold connection was what shows "it is possible" here, as shown in drawing 5.

[0038] And in this condition S1, in the mobile radio terminal unit PS, if a user demands call origination through the key input section 123, or a control section 121 starts application and call origination is required, refer to the resource information currently recorded on resource information storage area 121c for call origination control means 121a.

[0039] Since circuit switched connection "is impossible for resource information" at this time as mentioned above, call origination control means 121a controls the communications department 120, and gives the call setup demand for making packet-switching mold connection to a base transceiver station BS 1 instead of circuit switched connection.

[0040] In addition, when call origination was required by application, in order that application might not specify a communicative mold, priority should be given to circuit switched connection here by setting out which gives priority to circuit switched connection.

[0041] On the other hand, if the call setup demand from the mobile radio terminal unit PS is received in the communications department 110, since an opening is in the resource for making packet-switching mold connection, the communications department 110 will turn to the mobile radio terminal unit PS the response message which shows that the call setup demand from the mobile radio terminal unit PS was received, and will transmit a base transceiver station BS 1.

[0042] The radiocommunication link for communicating a packet-switching mold between the mobile radio terminal unit PS and a base transceiver station BS 1 is established by this, and the communication link by packet-switching mold connection is started (condition S2).

[0043] Next, in the mobile radio terminal unit PS, the actuation in the case of performing a handover is explained from the condition that the communication link by circuit switched connection is performed. The sequence is shown in drawing 4.

[0044] First, in a base transceiver station BS 1, the operating condition of a resource (the walkie-talkie and channel of the communications department) for resource information transmission-control means 111a to make the circuit switched connection and packet-switching mold connection in a local station with a predetermined period, respectively is detected, and it judges whether circuit switched connection and packet-switching mold connection are possible respectively through a local station. And by making the result of this decision into resource information, the communications department 110 is controlled and control to transmit is performed.

[0045] If the mobile radio terminal unit PS is in the wireless zone of a base transceiver station BS 1 at this time as shown in drawing 3, the mobile radio terminal unit PS will receive the resource information transmitted from a base transceiver station BS 1 by the communications department 120, and will record this resource information on resource information storage area 121c. The condition so far is made into S1'.

[0046] In addition, the resource information which the mobile radio terminal unit PS acquired from the base transceiver station BS 1 presupposes that they were circuit switched connection and packet-switching mold connection, and the thing that both shows "it is possible" here, as shown in drawing 6.

[0047] And in this condition S1', in the mobile radio terminal unit PS, if a user demands call origination through the key input section 123, or a control section 121 starts application and call origination is required, refer to the resource information currently recorded on resource information storage area 121c for call origination control means 121a.

[0048] Since resource information is circuit switched connection and packet-switching mold connection, and a thing that both shows "it is possible" at this time as mentioned above, call origination control means 121a controls the communications department 120, and gives the call setup demand for performing circuit switched connection to a base transceiver station BS 1.

[0049] In addition, when call origination was required by application, in order that application might not specify a communicative mold, it should be carried out by circuit switched connection having priority here by setting out which gives priority to circuit switched connection.

[0050] On the other hand, if the call setup demand from the mobile radio terminal unit PS is received in the communications department 110, since an opening is in the resource for performing circuit switched connection, the communications department 110 will turn to the mobile radio terminal unit PS the response message which shows that the call setup demand from the mobile radio terminal unit PS was received, and will transmit a base transceiver station BS 1.

[0051] The radiocommunication link for communicating a line switching mold between the mobile radio terminal unit PS and a base transceiver station BS 1 is established by this, and the communication link by circuit switched connection is started (condition S2').

[0052] If the mobile radio terminal unit PS arrives at the wireless zone of both base transceiver stations BS1 and BS2 from this condition S2' as it moves to the mobile radio terminal unit PS and is shown in drawing 7, the mobile radio terminal unit PS will receive the resource information transmitted from a base transceiver station BS 2 by the communications department 120, and will record this resource information on resource information storage area 121c. This condition is set to S3.

[0053] In addition, like above-mentioned drawing 5 R> 5, circuit switched connection is "impossible" and the resource information which the mobile radio terminal unit PS acquired from the base transceiver station BS 2 presupposes that packet-switching mold connection was what shows "it is possible" here.

[0054] And if the mobile radio terminal unit PS will need to move further and it will be necessary to carry out a handover to a base transceiver station BS 2 from a base transceiver station BS 1, handover control means 121b will perform handover control.

[0055] Here, handover control means 121b is acquired from the above-mentioned base transceiver station BS 2, and performs handover control with reference to the resource information currently recorded on resource information storage area 121c.

[0056] However, for the above-mentioned resource information, since the circuit switched connection which is "is impossible for the current line", handover control means 121b controls the communications department 120, and gives the call setup demand for making packet-switching mold connection to a base transceiver station BS 2 instead of circuit switched connection here.

[0057] On the other hand, if the call setup demand from the mobile radio terminal unit PS is received in the communications department 110, since an opening is in the resource for making packet-switching mold connection, the communications department 110 will turn to the mobile radio terminal unit PS the response message which shows that the call setup demand from the mobile radio terminal unit PS was received, and will transmit a base transceiver station BS 2.

[0058] The radiocommunication link for communicating a packet-switching mold between the mobile radio terminal unit PS and a base transceiver station BS 2 is established by this, and the communication link by packet-switching mold connection is started (condition S4).

[0059] Then, since the radiocommunication link for communicating a packet-switching mold between base transceiver stations BS 2 was established, the mobile radio terminal unit PS performs the demand which cuts the communication link of a line switching mold to a base transceiver station BS 1.

[0060] On the other hand, a base transceiver station BS 1 receives the above-mentioned demand from the mobile radio terminal unit PS, and cuts the communication link of the line switching mold established between the mobile radio terminal units PS (condition S5).

[0061] As mentioned above, in the mobile radio communication system of the above-mentioned configuration, when it has become clear that the communication link of a base transceiver station BS 1 and circuit switched connection cannot be performed using this resource information, instead of the communication link by circuit switched connection, it is made to acquire resource information from the base transceiver station BS 1 which the mobile radio terminal unit PS can connect beforehand, and to communicate by packet-switching mold connection.

[0062] Therefore, even when a base transceiver station does not receive the call request which performs circuit switched connection according to the mobile radio communication system of the above-mentioned configuration, a communication link can be started by packet-switching mold connection.

[0063] Moreover, before the mobile radio terminal unit PS performs a handover, when it has become

clear that the communication link by the base transceiver station BS 2 and circuit switched connection is uncontinuable using this resource information, instead of circuit switched connection, it is made to acquire resource information from the base transceiver station BS 2 of a migration place, and to communicate by packet-switching mold connection in the mobile radio communication system of the above-mentioned configuration.

[0064] Therefore, even if the communication link by circuit switched connection is uncontinuable in the base transceiver station BS 2 of a migration place at the time of a handover, a communication link is continuable according to the mobile radio communication system of the above-mentioned configuration, with packet-switching mold connection.

[0065] In addition, this invention is not limited to the gestalt of the above-mentioned implementation. For example, when [ which cannot perform the communication link by circuit switched connection ] it cannot case or continue, instead of circuit switched connection, it is made to perform the communication link by packet-switching mold connection with the gestalt of the above-mentioned implementation automatically.

[0066] However, when [ which cannot perform the communication link by circuit switched connection instead of this ] it cannot case or continue, it asks whether instead of circuit switched connection, I may give a user the communication link by packet-switching mold connection through the display 122 of the mobile radio terminal unit PS, and may be made to perform the communication link by packet-switching mold connection according to the response which led the key input section 123 by the user.

[0067] Moreover, when the resource information in which circuit switched connection is more possible than the base transceiver station connected after that when the communication link by packet-switching mold connection is performed instead of the communication link by circuit switched connection is acquired, instead of the communication link by packet-switching mold connection, it may be made to perform the communication link by circuit switched connection again. Moreover, even if it, in addition to this, performs deformation various in the range which does not deviate from the summary of this invention, it cannot be overemphasized that it can carry out similarly.

[0068]

[Effect of the Invention] As stated above, in case a line switching mold communication link is performed through a base transceiver station, when it is what shows that a line switching mold communication link is impossible for the information received with the receiving means, by this invention, it is made to perform a packet-switching mold communication link instead of a line switching mold communication link.

[0069] Therefore, even when a base transceiver station does not receive the call request which performs circuit switched connection according to this invention, the mobile radio communication system which can start a communication link by packet-switching mold connection, and a mobile radio terminal unit can be offered.

[0070] Moreover, in this invention, in case a handover is performed to the base transceiver station of a migration place, when the information received with the receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place, performing a line switching mold communication link through a base transceiver station, it is made to perform a handover by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0071] Therefore, according to this invention, even if the communication link by circuit switched connection is uncontinuable in the base transceiver station of a migration place at the time of a handover, the mobile radio communication system which can continue a communication link by packet-switching mold connection, and a mobile radio terminal unit can be offered.

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[Translation done.]

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**TECHNICAL FIELD**

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[Field of the Invention] This invention relates to the mobile radio terminal unit used by one of topologies by the mobile radio communication system which connects a mobile radio terminal unit to a communication network, and this system among the packet-switching mold connections with circuit switched connection.

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**PRIOR ART**

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[Description of the Prior Art] As everyone knows, the conventional mobile radio communication system has some which have circuit switched connection and packet-switching mold connection as a gestalt which connects a mobile radio terminal unit (a mobile station is called hereafter) to a communication network.

[0003] Circuit switched connection is a topology which occupies a circuit from call origination before [ terminal ] cutting of a call, and is suitable for mainly communicating continuous information, such as voice and an image, on real time.

[0004] Moreover, only in case packet-switching mold connection transmits the packet-ized data, it is a topology which occupies a circuit, and the packet transmitted is temporarily accumulated in a packet switch, and is transmitted to the terminal of a communications partner via a packet switch one by one according to routing. This topology is mainly applied to the communication link with the low demand of real time nature like data communication.

[0005] In addition, in the conventional mobile radio communication system, the topology to which these switching gestalten were determined at the time of a call setup, and were set once is not changed until a call is cut.

[0006] By the way, in the conventional mobile radio communication system, when the mobile station which is carrying out circuit switched connection moved between cels and a handover was performed, the communication link by circuit switched connection could not be continued through the base station of a migration place, but there was a case where a call was cut.

[0007] This originates in all the walkie-talkies for circuit switched connections using it in the base transceiver station in which circuit switched connection forms a wireless zone at a migration place since communication link time amount is long compared with packet-switching mold connection.

[0008] Moreover, when call origination for a mobile station to perform circuit switched connection was performed and there was no opening in the walkie-talkie for circuit switched connections as mentioned above, a call request was not received but there was a case where it could not communicate.

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**EFFECT OF THE INVENTION**

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[Effect of the Invention] As stated above, in case a line switching mold communication link is performed through a base transceiver station, when it is what shows that a line switching mold communication link is impossible for the information received with the receiving means, by this invention, it is made to perform a packet-switching mold communication link instead of a line switching mold communication link.

[0069] Therefore, even when a base transceiver station does not receive the call request which performs circuit switched connection according to this invention, the mobile radio communication system which can start a communication link by packet-switching mold connection, and a mobile radio terminal unit can be offered.

[0070] Moreover, in this invention, in case a handover is performed to the base transceiver station of a migration place, when the information received with the receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place, performing a line switching mold communication link through a base transceiver station, it is made to perform a handover by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0071] Therefore, according to this invention, even if the communication link by circuit switched connection is uncontinuable in the base transceiver station of a migration place at the time of a handover, the mobile radio communication system which can continue a communication link by packet-switching mold connection, and a mobile radio terminal unit can be offered.

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**TECHNICAL PROBLEM**

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[Problem(s) to be Solved by the Invention] In the conventional mobile radio communication system, when all the walkie-talkies for circuit switched connections were using it in the base transceiver station which forms the wireless zone of a migration place, for example at the time of a handover, the communication link by circuit switched connection could not be continued through the base transceiver station of a migration place, but there was a problem that a call will be cut.

[0010] Even if this invention was made that the above-mentioned problem should be solved and cannot continue the communication link by circuit switched connection in the base transceiver station of a migration place at the time of a handover, it aims at offering the mobile radio communication system which can continue a communication link by packet-switching mold connection.

[0011] Moreover, in the conventional mobile radio terminal unit, when there was no opening in the walkie-talkie for the circuit switched connections of a base transceiver station when call origination which performs circuit switched connection was performed for example, a call request was not received but there was a problem that it may be unable to communicate.

[0012] This invention was made that the above-mentioned problem should be solved, and even when not receiving the call request to which a base transceiver station performs circuit switched connection, it aims at offering the mobile radio terminal unit which can start a communication link by packet-switching mold connection.

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**MEANS**

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[Means for Solving the Problem] In order to attain the above-mentioned object, this invention is connected through the base transceiver station and wireless circuit which a mobile radio terminal unit can connect to a communication network. In the mobile radio communication system which performs selectively the packet-switching mold communication link which communicates by occupying a circuit only in case the packet-sized data are transmitted, and the line switching mold communication link which communicates by occupying a circuit regularly An information transmitting means to transmit the information a packet-switching mold communication link and a line switching mold communication link indicate it to be whether it is possible in a base transceiver station, respectively to a mobile radio terminal unit, and a mobile radio terminal unit A receiving means to receive information, and in case a line switching mold communication link is performed through a base transceiver station When it was what shows that a line switching mold communication link is impossible for the information received with the receiving means, the means of communications which performs a packet-switching mold communication link instead of a line switching mold communication link is provided, and it was made to constitute.

[0014] In order to attain the above-mentioned object, moreover, this invention The packet-switching mold communication link which connects through a base transceiver station and a wireless circuit connectable with a communication network, and communicates by occupying a circuit only in case the packet-sized data are transmitted, In the mobile radio terminal unit which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly A receiving means by which a packet-switching mold communication link and a line switching mold communication link receive the information which shows whether it is possible in a base transceiver station from a base transceiver station, respectively, In case a line switching mold communication link was performed through a base transceiver station, when it was what shows that a line switching mold communication link is impossible for the information received with the receiving means, the means of communications which performs a packet-switching mold communication link instead of a line switching mold communication link is provided, and it was made to constitute.

[0015] In the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration, in case a line switching mold communication link is performed through a base transceiver station, when it is what shows that a line switching mold communication link is impossible for the information received with the receiving means, instead of a line switching mold communication link, it is made to perform a packet-switching mold communication link.

[0016] Therefore, even when a base transceiver station does not receive the call request which performs circuit switched connection according to the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration, a communication link can be started by packet-switching mold connection.

[0017] In order to attain the above-mentioned object, moreover, this invention The packet-switching mold communication link which communicates by occupying a circuit only in case a mobile radio terminal unit is connected through a base transceiver station and a wireless circuit connectable with a communication network and the packet-sized data are transmitted, In the mobile radio communication system which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly An information transmitting means to transmit the information a packet-switching mold communication link and a line switching mold communication link indicate it

to be whether it is possible in a base transceiver station, respectively to a mobile radio terminal unit, and a mobile radio terminal unit Performing a line switching mold communication link through a receiving means to receive information, and a base transceiver station In case a handover is performed to the base transceiver station of a migration place, the information received with the receiving means When it was what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place, the means of communications which performs a handover is provided and it was made to constitute by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0018] In order to attain the above-mentioned object, again and this invention The packet-switching mold communication link which connects through a base transceiver station and a wireless circuit connectable with a communication network, and communicates by occupying a circuit only in case the packet-sized data are transmitted, In the mobile radio terminal unit which performs selectively the line switching mold communication link which communicates by occupying a circuit regularly A receiving means by which a packet-switching mold communication link and a line switching mold communication link receive the information which shows whether it is possible in a base transceiver station from a base transceiver station, respectively, In case a handover is performed to the base transceiver station of a migration place, performing a line switching mold communication link through a base transceiver station When the information received with the receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place The means of communications which performs a handover is provided and it was made to constitute by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0019] In the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration In case a handover is performed to the base transceiver station of a migration place, performing a line switching mold communication link through a base transceiver station When the information received with the receiving means is what shows that a line switching mold communication link is impossible in the base transceiver station of a migration place, it is made to perform a handover by performing a packet-switching mold communication link instead of the base transceiver station of a migration place, and a line switching mold communication link.

[0020] Therefore, even if the communication link by circuit switched connection is uncontinuable in the base transceiver station of a migration place at the time of a handover, a communication link is continuable according to the mobile radio communication system and the mobile radio terminal unit of the above-mentioned configuration, with packet-switching mold connection.

[0021]

[Embodiment of the Invention] Hereafter, 1 operation gestalt of this invention is explained with reference to a drawing. Drawing 1 shows the configuration of the mobile radio communication system concerning the 1st operation gestalt of this invention.

[0022] Mobile radio communication system serves as the wireless network NW1, and a control station CS and base transceiver stations BS1-BSn from the mobile radio terminal unit (mobile station) PS as a main configuration.

[0023] A control station CS generalizes and controls base transceiver stations BS1-BSn through the wireless network NW1, and manages the positional information of the mobile radio terminal unit PS based on the location registration information notified from base transceiver stations BS1-BSn. And when the mobile radio terminal unit PS moves between the wireless zones which base transceiver stations BS1-BSn form, respectively, a control station CS gives directions to the base transceiver stations BS1-BSn of a migration place a moved material, respectively, and performs handover processing which changes the base transceiver station where the mobile radio terminal unit PS communicates.

[0024] By the wireless zone (cel) formed, respectively, base transceiver stations BS1-BSn form a wide area communications area, establish a radio link between the mobile radio terminal units PS, connect the mobile radio terminal unit PS to the cable network NW2 through the wireless network NW1, and are equipped with the communications department 110 and a control section 111 as a main configuration.

[0025] The communications department 110 makes selectively circuit switched connection which communicates by occupying a communication link regularly through a wireless circuit among two or more mobile radio terminal units PS, and packet-switching mold connection which communicates by occupying a communication link only when transmitting and receiving the packet-sized data according to directions of a control section 111.

[0026] A control section 111 generalizes and controls each part of a local station according to the control program and control data with which it comes to have CPU, ROM, RAM, etc., and Above CPU is memorized by Above ROM, and is equipped with resource information transmission-control means 111a realized by software processing of Above CPU.

[0027] Resource information transmission-control means 111a detects the operating condition of the resource (the walkie-talkie and channel of the communications department) for making the circuit switched connection and packet-switching mold connection in a local station, respectively, and judges whether circuit switched connection and packet-switching mold connection are possible respectively through a local station. And the communications department 110 is controlled by making the result of this decision into resource information, and control transmitted to the mobile radio terminal unit PS is performed.

[0028] On the other hand, the mobile radio terminal unit PS is equipped with the communications department 120, a control section 121, a display 122, and the key input section 123 as a main configuration. The communications department 120 makes selectively circuit switched connection and packet-switching mold connection through a wireless circuit according to directions of a control section 111 between base transceiver stations BS.

[0029] A control section 121 generalizes and controls self each part according to the control program and control data with which it comes to have CPU, ROM, RAM, etc., and Above CPU is memorized by Above ROM, and it equips Above RAM with resource information storage area 121c while it is equipped with call origination control means 121a realized by software processing of Above CPU, and handover control means 121b.

[0030] When a demand of a user and a control section 121 perform an application program (application is called hereafter), call origination control means 121a performs call origination for switching the above-mentioned demand, application, and the mold according to the resource information received from the base transceiver stations BS1-BSn to connect, and establishes a communication link among base transceiver stations BS1-BSn.

[0031] Handover control means 121b performs handover control for communicating through the base transceiver stations BS1-BSn of a migration place, and establishes the communication link of switching of a mold based on the resource information received from this base transceiver station among the base transceiver stations BS1-BSn of a migration place.

[0032] Resource information storage area 121c is area which memorizes the resource information which the communications department 120 received from base transceiver stations BS1-BSn.

[0033] Next, actuation of the mobile radio communication system of the above-mentioned configuration is explained. Drawing 2 and drawing 4 are drawings showing the sequence of the communication link performed between the mobile radio terminal unit PS and base transceiver stations BS1 and BS2.

[0034] First, in a base transceiver station BS 1, when the mobile radio terminal unit PS performs call origination which requires the communication link of a line switching mold in the condition that the resources for communicating a line switching mold are insufficient, actuation is explained. The sequence is shown in drawing 2.

[0035] First, in a base transceiver station BS 1, first, the operating condition of a resource (the walkie-talkie and channel of the communications department) for resource information transmission-control means 111a to make the circuit switched connection and packet-switching mold connection in a local station with a predetermined period, respectively is detected, and it judges whether circuit switched connection and packet-switching mold connection are possible respectively through a local station. And by making the result of this decision into resource information, the communications department 110 is controlled and control to transmit is performed.

[0036] If the mobile radio terminal unit PS is in the wireless zone of a base transceiver station BS 1 at this time as shown in drawing 3, the mobile radio terminal unit PS will receive the resource

information transmitted from a base transceiver station BS 1 by the communications department 120, and will record this resource information on resource information storage area 121c. The condition so far is set to S1.

[0037] In addition, circuit switched connection is "impossible" and the resource information which the mobile radio terminal unit PS acquired from the base transceiver station BS 1 presupposes that packet-switching mold connection was what shows "it is possible" here, as shown in drawing 5.

[0038] And in this condition S1, in the mobile radio terminal unit PS, if a user demands call origination through the key input section 123, or a control section 121 starts application and call origination is required, refer to the resource information currently recorded on resource information storage area 121c for call origination control means 121a.

[0039] Since circuit switched connection "is impossible for resource information" at this time as mentioned above, call origination control means 121a controls the communications department 120, and gives the call setup demand for making packet-switching mold connection to a base transceiver station BS 1 instead of circuit switched connection.

[0040] In addition, when call origination was required by application, in order that application might not specify a communicative mold, priority should be given to circuit switched connection here by setting out which gives priority to circuit switched connection.

[0041] On the other hand, if the call setup demand from the mobile radio terminal unit PS is received in the communications department 110, since an opening is in the resource for making packet-switching mold connection, the communications department 110 will turn to the mobile radio terminal unit PS the response message which shows that the call setup demand from the mobile radio terminal unit PS was received, and will transmit a base transceiver station BS 1.

[0042] The radiocommunication link for communicating a packet-switching mold between the mobile radio terminal unit PS and a base transceiver station BS 1 is established by this, and the communication link by packet-switching mold connection is started (condition S2).

[0043] Next, in the mobile radio terminal unit PS, the actuation in the case of performing a handover is explained from the condition that the communication link by circuit switched connection is performed. The sequence is shown in drawing 4.

[0044] First, in a base transceiver station BS 1, the operating condition of a resource (the walkie-talkie and channel of the communications department) for resource information transmission-control means 111a to make the circuit switched connection and packet-switching mold connection in a local station with a predetermined period, respectively is detected, and it judges whether circuit switched connection and packet-switching mold connection are possible respectively through a local station. And by making the result of this decision into resource information, the communications department 110 is controlled and control to transmit is performed.

[0045] If the mobile radio terminal unit PS is in the wireless zone of a base transceiver station BS 1 at this time as shown in drawing 3, the mobile radio terminal unit PS will receive the resource information transmitted from a base transceiver station BS 1 by the communications department 120, and will record this resource information on resource information storage area 121c. The condition so far is made into S1'.

[0046] In addition, the resource information which the mobile radio terminal unit PS acquired from the base transceiver station BS 1 presupposes that they were circuit switched connection and packet-switching mold connection, and the thing that both shows "it is possible" here, as shown in drawing 6.

[0047] And in this condition S1', in the mobile radio terminal unit PS, if a user demands call origination through the key input section 123, or a control section 121 starts application and call origination is required, refer to the resource information currently recorded on resource information storage area 121c for call origination control means 121a.

[0048] Since resource information is circuit switched connection and packet-switching mold connection, and a thing that both shows "it is possible" at this time as mentioned above, call origination control means 121a controls the communications department 120, and gives the call setup demand for performing circuit switched connection to a base transceiver station BS 1.

[0049] In addition, when call origination was required by application, in order that application might not specify a communicative mold, it should be carried out by circuit switched connection having

priority here by setting out which gives priority to circuit switched connection.

[0050] On the other hand, if the call setup demand from the mobile radio terminal unit PS is received in the communications department 110, since an opening is in the resource for performing circuit switched connection, the communications department 110 will turn to the mobile radio terminal unit PS the response message which shows that the call setup demand from the mobile radio terminal unit PS was received, and will transmit a base transceiver station BS 1.

[0051] The radiocommunication link for communicating a line switching mold between the mobile radio terminal unit PS and a base transceiver station BS 1 is established by this, and the communication link by circuit switched connection is started (condition S2').

[0052] If the mobile radio terminal unit PS arrives at the wireless zone of both base transceiver stations BS1 and BS2 from this condition S2' as it moves to the mobile radio terminal unit PS and is shown in drawing 7, the mobile radio terminal unit PS will receive the resource information transmitted from a base transceiver station BS 2 by the communications department 120, and will record this resource information on resource information storage area 121c. This condition is set to S3.

[0053] In addition, like above-mentioned drawing 5 R> 5, circuit switched connection is "impossible" and the resource information which the mobile radio terminal unit PS acquired from the base transceiver station BS 2 presupposes that packet-switching mold connection was what shows "it is possible" here.

[0054] And if the mobile radio terminal unit PS will need to move further and it will be necessary to carry out a handover to a base transceiver station BS 2 from a base transceiver station BS 1, handover control means 121b will perform handover control.

[0055] Here, handover control means 121b is acquired from the above-mentioned base transceiver station BS 2, and performs handover control with reference to the resource information currently recorded on resource information storage area 121c.

[0056] However, for the above-mentioned resource information, since the circuit switched connection which is "is impossible for the current line", handover control means 121b controls the communications department 120, and gives the call setup demand for making packet-switching mold connection to a base transceiver station BS 2 instead of circuit switched connection here.

[0057] On the other hand, if the call setup demand from the mobile radio terminal unit PS is received in the communications department 110, since an opening is in the resource for making packet-switching mold connection, the communications department 110 will turn to the mobile radio terminal unit PS the response message which shows that the call setup demand from the mobile radio terminal unit PS was received, and will transmit a base transceiver station BS 2.

[0058] The radiocommunication link for communicating a packet-switching mold between the mobile radio terminal unit PS and a base transceiver station BS 2 is established by this, and the communication link by packet-switching mold connection is started (condition S4).

[0059] Then, since the radiocommunication link for communicating a packet-switching mold between base transceiver stations BS 2 was established, the mobile radio terminal unit PS performs the demand which cuts the communication link of a line switching mold to a base transceiver station BS 1.

[0060] On the other hand, a base transceiver station BS 1 receives the above-mentioned demand from the mobile radio terminal unit PS, and cuts the communication link of the line switching mold established between the mobile radio terminal units PS (condition S5).

[0061] As mentioned above, in the mobile radio communication system of the above-mentioned configuration, when it has become clear that the communication link of a base transceiver station BS 1 and circuit switched connection cannot be performed using this resource information, instead of the communication link by circuit switched connection, it is made to acquire resource information from the base transceiver station BS 1 which the mobile radio terminal unit PS can connect beforehand, and to communicate by packet-switching mold connection.

[0062] Therefore, even when a base transceiver station does not receive the call request which performs circuit switched connection according to the mobile radio communication system of the above-mentioned configuration, a communication link can be started by packet-switching mold connection.

[0063] Moreover, before the mobile radio terminal unit PS performs a handover, when it has become clear that the communication link by the base transceiver station BS 2 and circuit switched connection is uncontinuable using this resource information, instead of circuit switched connection, it is made to acquire resource information from the base transceiver station BS 2 of a migration place, and to communicate by packet-switching mold connection in the mobile radio communication system of the above-mentioned configuration.

[0064] Therefore, even if the communication link by circuit switched connection is uncontinuable in the base transceiver station BS 2 of a migration place at the time of a handover, a communication link is continuable according to the mobile radio communication system of the above-mentioned configuration, with packet-switching mold connection.

[0065] In addition, this invention is not limited to the gestalt of the above-mentioned implementation. For example, when [ which cannot perform the communication link by circuit switched connection ] it cannot case or continue, instead of circuit switched connection, it is made to perform the communication link by packet-switching mold connection with the gestalt of the above-mentioned implementation automatically.

[0066] However, when [ which cannot perform the communication link by circuit switched connection instead of this ] it cannot case or continue, it asks whether instead of circuit switched connection, I may give a user the communication link by packet-switching mold connection through the display 122 of the mobile radio terminal unit PS, and may be made to perform the communication link by packet-switching mold connection according to the response which led the key input section 123 by the user.

[0067] Moreover, when the resource information in which circuit switched connection is more possible than the base transceiver station connected after that when the communication link by packet-switching mold connection is performed instead of the communication link by circuit switched connection is acquired, instead of the communication link by packet-switching mold connection, it may be made to perform the communication link by circuit switched connection again. Moreover, even if it, in addition to this, performs deformation various in the range which does not deviate from the summary of this invention, it cannot be overemphasized that it can carry out similarly.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] Drawing showing the configuration of 1 operation gestalt of the mobile radio communication system concerning this invention.

[Drawing 2] Drawing showing the sequence at the time of the call origination of the mobile radio communication system shown in drawing 1.

[Drawing 3] Drawing showing the mobile radio terminal unit PS located in the wireless zone which the base transceiver station BS 1 shown in drawing 1 forms.

[Drawing 4] Drawing showing the sequence at the time of the call origination of the mobile radio communication system shown in drawing 1, and a handover.

[Drawing 5] Drawing showing the resource information notified to the mobile radio terminal unit PS by the sequence shown in drawing 2 and drawing 4.

[Drawing 6] Drawing showing the resource information notified to the mobile radio terminal unit PS by the sequence shown in drawing 4.

[Drawing 7] Drawing showing signs that the mobile radio terminal unit PS shown in drawing 1 moves to the wireless zone which a base transceiver station BS 2 forms from the wireless zone which a base transceiver station BS 1 forms.

### [Description of Notations]

- 110 -- Communications department
- 111 -- Control section
- 111a -- Resource information transmission-control means
- 120 -- Communications department
- 121 -- Control section
- 121a -- Call origination control means
- 121b -- Handover control means
- 121c -- Resource information storage area
- 122 -- Display
- 123 -- Key input section
- BS1-BSn -- Base transceiver station
- CS -- Control station
- NW1 -- Wireless network
- NW2 -- Cable network
- PS -- Mobile radio terminal unit

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[Translation done.]

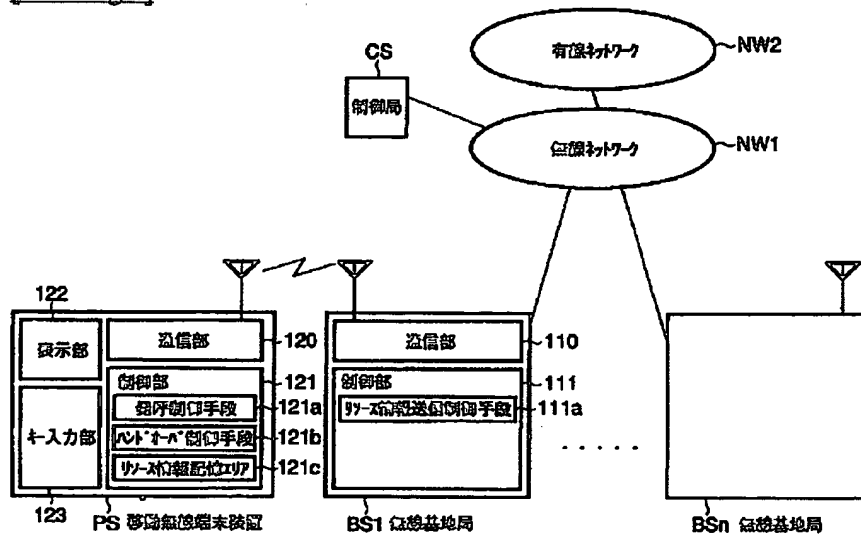
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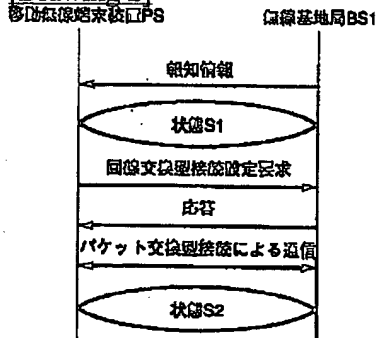
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## DRAWINGS

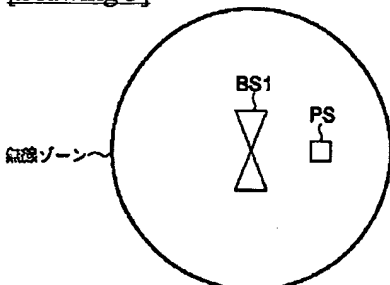
[Drawing 1]



[Drawing 2]



[Drawing 3]





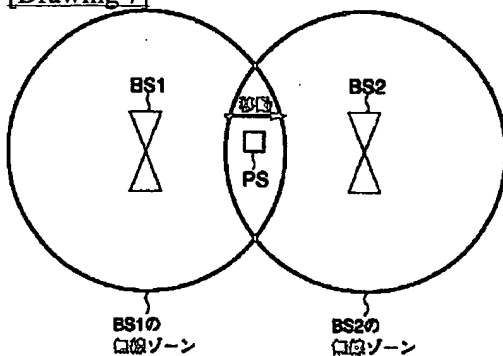
[Drawing 5]

回線交換	不可能
パケット交換	可能

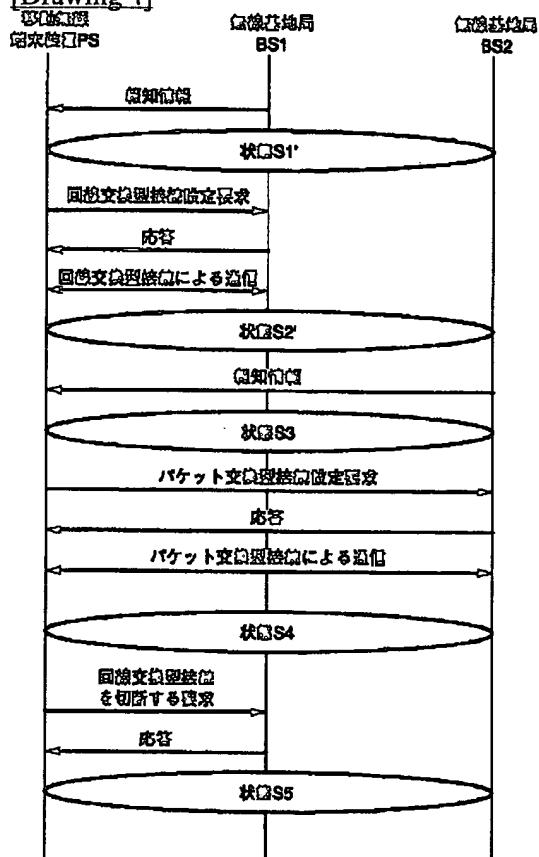
[Drawing 6]

回線交換	可能
パケット交換	可能

[Drawing 7]



[Drawing 4]



[Translation done.]